



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,523	10/03/2003	Sorel Horovitz	MP0267	1345

44990 7590 04/19/2007
KENYON & KENYON LLP
333 W. SAN CARLOS STREET
SUITE 600
SAN JOSE, CA 95110-2731

EXAMINER

DO, CHAT C

ART UNIT	PAPER NUMBER
----------	--------------

2193

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/678,523	HOROVITZ, SOREL	
	Examiner	Art Unit	
	Chat C. Do	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/03/03;02/25/04;12/20/04;02/12/07.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-96 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7, 11-14, 19, 20, 22-25, 29-37, 39-42, 46-53, 70, 74-77 and 82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 and 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/03/03</u> | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 1-6,8-10,15-18,21,26-28,38,43-45,54-69,71-73,78-81 and 83-96.

DETAILED ACTION

1. This communication is responsive to Election/Restriction filed 02/12/2007.
2. Claims 1-96 are pending in this application. Claims 7 and 37 are independent claims. In the Response to Election/Restriction, claims 7, 11-14, 19-20, 22-25, 29-37, 39-42, 46-53, 70, 74-77, and 82 are elected as Group II Species II for examination. This Office Action is made non-final.

Election/Restrictions

3. Applicant's election of Species II under Group II claims 7, 11-14, 19-20, 22-25, 29-37, 39-42, 46-53, 70, 74-77, and 82 in the reply filed on 02/21/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
4. Claims 1-6, 8-10, 15-18, 21, 26-28, 38, 41-45, 54-69, 71-73, 78-81, and 83-96 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Groups I and III along with Species I and III under Group II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 02/21/2007.

Specification

5. The disclosure is objected to because of the following informalities:

Art Unit: 2193

The applicant is advised to update information cited under the "Cross-Reference to Related Applications" section in page 1 of original disclosure as necessary for clarification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 20, 22-25, 29-37, 39-42, 46-53, 70, 74-77, and 82 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 20, it is unclear whether the claim is an apparatus for a method since the claim cites an apparatus for performing a method. For examination purposes, the examiner considers the claim as an apparatus claim having only limitations cited in the body of the claim. Similarly, claim 37 has the same rejection.

Re claim 70, it is unclear and indefinite because the software claim does not specifically disclose any instruction for performing intended function or method. For examination purpose, the examiner considers the whole limitations of method claim into the body of claim along with an instruction for every limitation of the method claim. Claims 74-77 and 82 have the same rejection.

Thus, claims 22-25, 29-36, 39-42, and 46-53 are also rejected for being dependent on the rejected base claims 20 and 37 respectively.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 7, 11-14, 19-20, 22-25, 29-37, 39-42, 46-53, 70, 74-77, and 82 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 7, 11-14, 19-20, 22-25, 29-37, 39-42, 46-53, 70, 74-77, and 82 cite a method, apparatus, and software product for finding a next free bit in a register in accordance with an algorithm. In order for claims to be statutory, claims must either include a practical/physical application or a concrete, useful, and tangible result. However, claims 7, 11-14, 19-20, 22-25, 29-37, 39-42, 46-53, 70, 74-77, and 82 merely disclose steps/components for finding the free bit without further disclosing a practical/physical application or a useful and tangible result of finding the free bit. Therefore, claims 7, 11-14, 19-20, 22-25, 29-37, 39-42, 46-53, 70, 74-77, and 82 are directed to non-statutory subject matter.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 2193

11. Claims 7, 11, 13, 20, 22, 29-31, 33, 36-37, 39, 46-48, 50, 53, 70, 74, and 76 are rejected under 35 U.S.C. 102(a) as being anticipated by Ott (U.S. 6,477,552).

Re claim 7, Ott discloses in Figures 1-4 a method for finding a next free bit in a register having N bits and a current pointer pointing to one of the bits (e.g. abstract wherein the free bit is the zero bit within the nibble and N is equated to 32 bits), the method comprising: breaking the N bits of a check vector in the register into M parts, wherein N and M are integers and $1 < M < N$ (e.g. Figure 2 wherein 32-bits are break down into 8 part and each part consists of 4 bits); and selecting an available part that has a free bit (e.g. output of the priority encoder in Figure 2 for selecting the most leading zero part).

Re claim 11, Ott further discloses in Figures 1-4 the available part is a first part, having a free bit, to the left of the part pointed to by the current pointer (e.g. Figure 4 table).

Re claim 13, Ott further discloses in Figures 1-4 finding a free bit in the available part (e.g. abstract).

Re claim 20, it is an apparatus claim of claim 7. Thus, claim 20 is also rejected under the same rationale as cited in the rejection of rejected claim 7.

Re claim 22, it is an apparatus claim of claim 11. Thus, claim 22 is also rejected under the same rationale as cited in the rejection of rejected claim 11.

Re claim 29, it has similar limitations cited in claim 13. Thus, claim 29 is also rejected under the same rationale as cited in the rejection of rejected claim 13.

Re claim 30, it has similar limitations cited in claim 11. Thus, claim 30 is also rejected under the same rationale as cited in the rejection of rejected claim 11.

Re claim 31, it has similar limitations cited in claim 24. Thus, claim 31 is also rejected under the same rationale as cited in the rejection of rejected claim 24.

Re claim 33, Ott further discloses in Figures 1-4 the free bit finder finds a free bit from the beginning of the available part (e.g. Figure 4 table).

Re claim 36, Ott further discloses in Figures 1-4 a next vector generator for generating the next vector with the found free bit masked (e.g. output of Figure 2).

Re claim 37, it is a means apparatus claim of claim 20. Thus, claim 37 is also rejected under the same rationale as cited in the rejection of rejected claim 20.

Re claim 39, it is a means apparatus claim of claim 22. Thus, claim 39 is also rejected under the same rationale as cited in the rejection of rejected claim 22.

Re claim 46, it is a means apparatus claim of claim 29. Thus, claim 46 is also rejected under the same rationale as cited in the rejection of rejected claim 29.

Re claim 47, it is a means apparatus claim of claim 30. Thus, claim 47 is also rejected under the same rationale as cited in the rejection of rejected claim 30.

Re claim 48, it is a means apparatus claim of claim 31. Thus, claim 48 is also rejected under the same rationale as cited in the rejection of rejected claim 31.

Re claim 50, it is a means apparatus claim of claim 33. Thus, claim 50 is also rejected under the same rationale as cited in the rejection of rejected claim 33.

Re claim 53, it is a means apparatus claim of claim 36. Thus, claim 53 is also rejected under the same rationale as cited in the rejection of rejected claim 36.

Art Unit: 2193

Re claim 70, it is a computer software product claim of claim 7. Thus, claim 70 is also rejected under the same rationale as cited in the rejection of rejected claim 7.

Re claim 74, it is a computer software product claim of claim 11. Thus, claim 74 is also rejected under the same rationale as cited in the rejection of rejected claim 11.

Re claim 76, it is a computer software product claim of claim 13. Thus, claim 76 is also rejected under the same rationale as cited in the rejection of rejected claim 13.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 19, 23-24, 35, 40-41, 52, and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ott (U.S. 6,477,552) in view of Ott (U.S. 6,697,828).

Re claim 19, Ott '552 fails to disclose in Figures 1-4 creating a check sector, wherein each bit of the check sector results from performing an AND operation to all bits of a corresponding part of the M parts; and deciding whether the register has a free bit by performing an AND operation to all bits of the check sector. However, Ott '828 disclose creating a check sector, wherein each bit of the check sector results from performing an AND operation to all bits of a corresponding part of the M parts; and deciding whether the register has a free bit by performing an AND operation to all bits of the check sector. (e.g. Figure 3 with all AND gates). Therefore, it would have been obvious to a person

having ordinary skill in the art the time the invention is made to add creating a check sector, wherein each bit of the check sector results from performing an AND operation to all bits of a corresponding part of the M parts; and deciding whether the register has a free bit by performing an AND operation to all bits of the check sector as seen in Ott '828 into Ott '552 because it would enable to indicate whether or not the operand is zero (e.g. col. 4 lines 64-68).

Re claim 23, it is an apparatus claim of claim 19. Thus, claim 23 is also rejected under the same rationale as cited in the rejection of rejected claim 19.

Re claim 24, Ott further discloses in Figures 1-4 a second breaker for breaking the current pointer into upper bits and lower bits, wherein the current pointer has X bits, the upper bits have Y bits and a value U, and the lower bits have X-Y bits and a value L, and wherein $0 \leq U \leq 2^Y - 1$ and $0 \leq L \leq 2^{X-Y} - 1$, where all of X, Y, U, and L are integers (e.g. Figure 2).

Re claim 35, it has similar limitations cited in claim 19. Thus, claim 35 is also rejected under the same rationale as cited in the rejection of rejected claim 19.

Re claim 40, it is a means apparatus claim of claim 23. Thus, claim 40 is also rejected under the same rationale as cited in the rejection of rejected claim 23.

Re claim 41, it is a means apparatus claim of claim 24. Thus, claim 41 is also rejected under the same rationale as cited in the rejection of rejected claim 24.

Re claim 52, it is a means apparatus claim of claim 35. Thus, claim 52 is also rejected under the same rationale as cited in the rejection of rejected claim 35.

Re claim 82, it is a computer software product claim of claim 19. Thus, claim 82 is also rejected under the same rationale as cited in the rejection of rejected claim 19.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 5,091,874 to Watanabe et al. disclose an encoder apparatus.
- b. U.S. Patent No. 6,779,008 to Erle et al. disclose a method and apparatus for binary leading zero counting with constant-biased result.
- c. U.S. Patent No. 5,568,410 to Bechade discloses a method and apparatus for determining the amount of leading zeros or ones in a binary data field.
- d. U.S. Patent No. 5,615,020 to Keith discloses a system and method for fast Huffman decoding.
- e. U.S. Patent No. 4,028,667 to Breslau et al. disclose an asynchronous, hierarchical loop communication system with independent local station control of access to inbound time portions without central control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

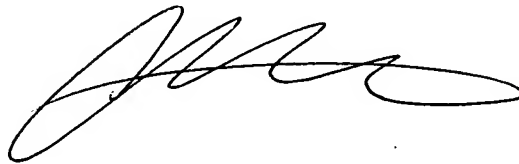
Art Unit: 2193

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2193

April 16, 2007

A handwritten signature in black ink, appearing to be 'Chat C. Do', written in a cursive style.